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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,574	09/05/2003	Daniel John Smith	1171/41365/Case 135	7897
279	7590	03/20/2006	EXAMINER	
Trexler, Bushnell, Giangiorgi, Blackstone & Marr, Ltd. 105 West Adams Street Suite 3600 Chicago, IL 60603			AFTERGUT, JEFF H	
			ART UNIT	PAPER NUMBER
			1733	
DATE MAILED: 03/20/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/656,574

Applicant(s)

SMITH ET AL.

Examiner

Jeff H. Aftergut

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 14-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 25-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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Election/Restrictions

1. Applicant's election of Group I, claims 1-13 and 25-27 in the reply filed on 1-11-06 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Claims 14-24 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 1-11-06.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by German Patent 19848172.

German Patent '172 taught that it was known at the time the invention was made to form a plastic conduit by applying a thin plastic ribbon 2 spirally around a former (a mandrel) which was rotating and advancing the tube. The leading end of each turn of the ribbon was overlapping the trailing edge of a previous turn of ribbon on the former and the trailing edge of each turn is under lapping the leading edge of a successive turn while in advance of the overlapping of the

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turns one applied a bead of molten plastic 8 from applicator 15 along the exposed trailing edge of the most recently applied turn on the former such that the bead 8 of plastic is interposed between the trailing edge and the overlapping leading edge of the turns of the ribbon.

As depicted, the ribbon was pressed down in such a manner that the overlapped ribbon substantially meets the under lapped ribbon at the training edges of the bead.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over German Patent 19848172 in view of Carlson (US Patent 5,454,061) and Hytrel ® thermoplastic polyester elastomer (from duPont, 2000).

German Patent '172 taught the formation of the conduit, but failed to expressly state that the same was formed from a thin film of material which was vapor permeable. Additionally, while the reference suggested that a wire was disposed adjacent the edge of the turns and embedded within the plastic of the bead applied prior to the overlap of the leading edge of the adjacent turn, see wire 3, there is no indication that the wire was intended to be electrically

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conductive. However, in the art of making a conduit for a medical tubing which was used in a breathing apparatus, it was well known to form the ribbon from a thin material which was water vapor permeable and additionally it was well known to incorporate a wire which was used to carry a current to heat the tube therein in use (an electrically conductive wire) as evidenced by Carlson '061 and Hytrel®.

Carlson '061 expressed a desire to manufacture a medical tubing for a breathing device for example which included a wire therein embedded within a plastic bead which was extruded adjacent the overlap of turns of a thin strip wound on a former to make the tube. The reference taught that the thin plastic ribbon material was preferably formed from Hytrel® 5556 (see column 3, lines 7-21 of Carlson '061). The reference to Hytrel® suggested that those skilled in the art would have understood that Hytrel® 5556 was in fact water vapor permeable, see the cover sheet of the brochure as well as page 39 of the same. Clearly, one skilled in the art at the time the invention was made would have understood when forming a conduit for a breathing apparatus that the reinforcing wire employed in German Patent '172 would have been a conductive wire material. Additionally, one skilled in the art would have readily understood that the thickness of the wound strip was intended to be thin and that the reference to Carlson '061 was forming a conduit similar in nature to the conduit formed by applicant. While the reference did not expressly recite the thickness of the film used to make the conduit, one skilled in the art would have expected to select a film thickness suitable for the intended use in the finished assembly and Carlson '061 clearly

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envisioned the use of a thin film material. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a thin film of Hytrel® 5556 for the ribbon material being wound to make the conduit as well as an electrically conductive wire for the reinforcing wire in order to provide the conduit with a means to heat the fluid being transported there through in the manufacture of a medical tubing as suggested by Carlson '061 wherein one skilled in the art would have understood that thin film of Hytrel® 5556 to have been vapor permeable as suggested by Hytrel® thermoplastic polyester elastomer (from duPont, 2000) in the known winding operation to make a conduit as taught by German Patent 19848172.

7. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as set forth above in paragraph 6 further taken with Nash et al.

The references as set forth above in paragraph 6 taught the overall operation for forming the tubular member but failed to express that one skilled in the art would have applied a sacrificial layer on the interior prior to the formation of tube via the winding operation. However, it was known in the art of making plastic tubing via a helical winding operation to provide an overlapped sacrificial layer for the mandrel prior to winding a material utilized for forming the tube thereupon as evidenced by Nash et al. The reference to Nash et al suggested that those skilled in the art at the time the invention was made would have incorporated a cardboard inner layer applied to the mandrel followed by application of a cellophane parting layer both of which were helically wound upon

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a mandrel. The reference additionally suggested that those versed in the art would have applied a fiber resin impregnated layer upon the cellophane layer. The wound tubular assembly was subsequently cured in an oven. After formation, the interior cardboard and cellophane layers were removed from the tubular assembly. As it would have provided for a support surface during winding which would have yielded a smooth interior surface in the finished assembly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a sacrificial layer on the interior of the assembly prior to the winding operation wherein the sacrificial layer was removed subsequent to the winding operation as suggested by Nash et al in the process of making a wound tube as set forth above in paragraph 6.

8. Claims 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nash et al in view of Wade.

Nash et al taught that it was known at the time the invention was made to wind a sacrificial layer of a cellophane material on a mandrel over a sacrificial layer of cardboard, followed by formation of a conduit or tube thereon. The reference taught that the formed tube was made from polyester resin and fibers and that this assembly was disposed through a curing oven in order to heat the polyester to cure this resin. Disclosed about the exterior of the tube was another wound cellophane layer. The reference taught that subsequent to the processing the cellophane layer as well as the cardboard layer were removed from the assembly. The reference did not expressly state that the interior cellophane layer was welded at the overlaps therein, however it should be noted that the

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application of the cardboard on the core initially was clearly there to prevent sticking of the cellophane onto the mandrel in processing. Additionally, one would have expected that as the exterior layer was heated to the point that it shrunk (an exterior cellophane layer) one would have expected that the heating to cure the polyester resin was adequate to result in a melting and/or fusing of the interior cellophane layer. To evidence that one skilled in the art would have understood that such heating would have fused the cellophane layer therein, the reference to Wade is cited.

Wade suggested that those skilled in the art would have understood that the cellophane layer which was wound in an overlapping manner would have fused at the overlaps with the application of heat as in the processing by Nash et al. More specifically, Wade suggested that one skilled in the art would have wound a cellophane layer about a mandrel in a helical pattern and subjected the same to heating whereby a tube was formed via the welding of the wound cellophane material. Thus, one skilled in the art would have expected that the heating of the polyester resin in Nash et al would have been sufficient to melt the resin in Wade to form an inner parting layer completely over the mandrel. Additionally, one that it is believed the function of the cardboard layer disposed over the mandrel initially in Nash served as preventing any of the cellophane from melting to and adhering to the mandrel in Nash et al. It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply a sacrificial layer of a plastic material on the mandrel prior to formation of the tubular member wherein the assembly heated which would have welded the

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overlaps of the wound cellophane plastic layer on the mandrel as taught by Wade in the process of making the tubular member as taught by Nash et al.

9. Claims 10-13 and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as set forth above in paragraph 7 further taken with Wade.

The reference to Nash as discussed above in paragraph 7 suggested that one skilled in the art would have employed a sacrificial layer disposed on the mandrel. The reference failed to expressly state that one skilled in the art would have understood that the cellophane layer which was applied as part of the sacrificial layer would have welded at the overlaps in the application of the same. It should be noted that the references to Carlson '061 and German Patent '172 suggested that one skilled in the art would have formed the tube itself from a known winding operation wherein a ribbon was wound and the overlaps would have had a bead of plastic material applied thereto.

Wade suggested that one skilled in the art would have wound a cellophane layer about a mandrel in a helical pattern and subjected the same to heating whereby a tube was formed via the welding of the wound cellophane material. Thus, one skilled in the art would have expected that the heating of the polyester resin in Nash et al would have been sufficient to melt the resin in Wade to form an inner parting layer completely over the mandrel. Additionally, one that it is believed the function of the cardboard layer disposed over the mandrel initially in Nash served as preventing any of the cellophane from melting to and adhering to the mandrel in Nash et al. it would have been obvious to one of ordinary skill in

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the art at the time the invention was made to employ a sacrificial layer which was melted in the bonding process for making the tube (note that in the formation of the conduit in accordance with the processing of Carlson '061 and German Patent '172 the assembly was welded by heat extruding the molten bead and depositing the same on the mandrel and thus the assembly was heated during the processing therein and one would have expected such heating would have fused the inner cellophane layer therein) as suggested by Wade in the process of making the tubular member as taught by the references as set forth above in paragraph 7.

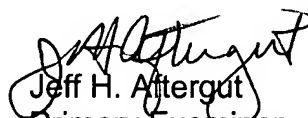
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff H. Aftergut whose telephone number is 571-272-1212. The examiner can normally be reached on Monday-Friday 7:15-345 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jeff H. Aftergut
Primary Examiner
Art Unit 1733

JHA
March 16, 2006